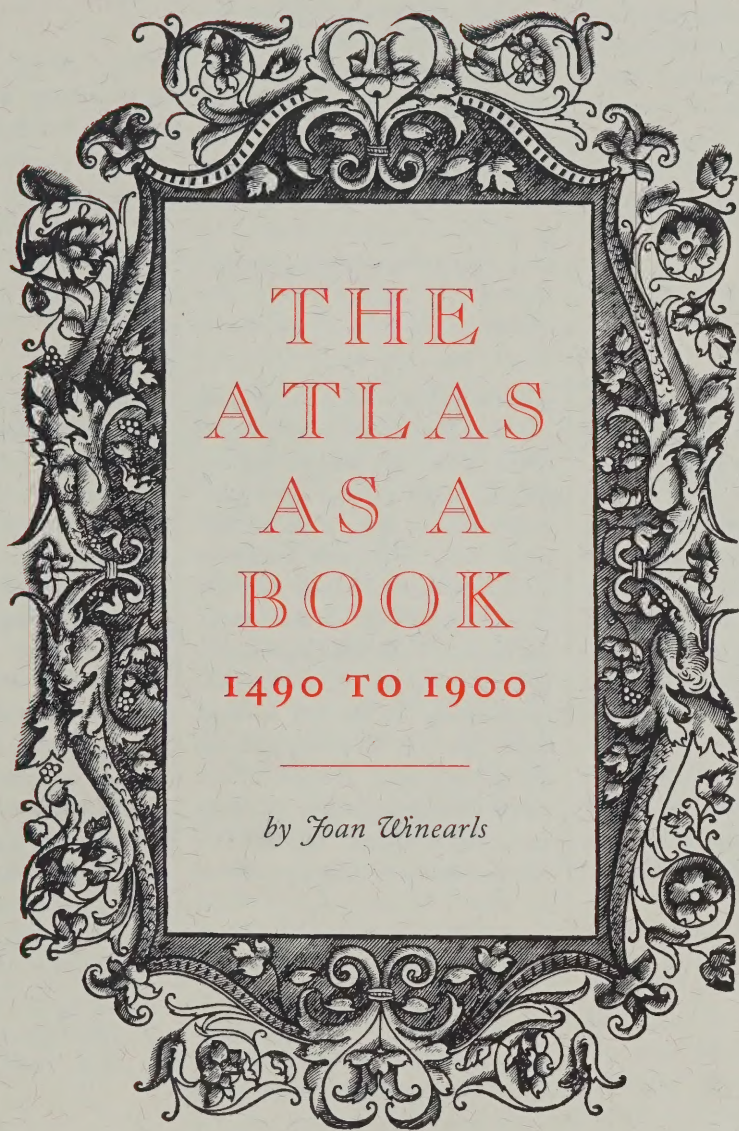




*Guide to an exhibition in the
Thomas Fisher Rare Book Library
University of Toronto*

18 October 1993 ~ 14 January 1994

THE ATLAS AS A BOOK: 1490 TO 1900

THE ATLAS, ONE OF THE oldest geographical encyclopedias and works of reference, has often been considered to be simply a group of maps bound together. Yet each atlas has been conceived and shaped, put into meaningful order, and made uniform in some way by the author, editor, or publisher who guided the production to completion. This exhibition documents the evolution of the form and content of the atlas, over the first four centuries of its existence. This period witnessed the emergence of the atlas from various forms of world and regional topographic maps, and nautical charts, which were being assembled to-

gether in the late fifteenth and sixteenth centuries. The creation of the uniform modern atlas with associated text, and the introduction of large, often multi-volume atlases, characterized developments in the seventeenth century. In the eighteenth century, more instructive preliminaries were added to some atlases, and while some publishers explored new ideas for selling atlases by subscription, others returned to the idea of atlases 'factice', made up of previously published non-uniform maps. Thematic atlases, specifically historical and physical atlases, which were developed in the nineteenth century, culminated in the first national

or multi-subject atlas for a country in 1899. Even at the end of the nineteenth century, however, the format of the larger atlases was still much the same as their sixteenth and seventeenth century counterparts - double-page plates mounted on guards, often with versos blank.

The exhibition has been mounted to coincide with the 29th Annual Conference on Editorial Problems, to be held at the University of Toronto on November 5th and 6th, 1993. The theme this year is 'Editing Early and Historical Atlases'. All items in the exhibition are from the collections of the Thomas Fisher Rare Book Library, unless otherwise indicated.

Aknowledgements

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Precursors to the Atlas

THE EARLY ATLAS FORM developed from several sources, including the tradition of portolan chart-making, Ptolemy's *Geographia*, which included instructions on making maps, the creation of specialized map books with text, such as the isolario or island atlases, and the concept of binding a group of maps together for a particular buyer.

Chart of the North Atlantic Ocean from [Portolan Atlas of the World. Venice? second half of the 16th century]

Illuminated MS. on vellum. 15 charts on 13 map openings, mounted on thick paste-board, on both sides, folding concertina-style into original gold-tooled leather covers.

Colour photograph showing the mounting of the sheets in the portolan atlas on boards in concertina form.

Portolan atlases were bound forms of portolan charts, that is, coastal charts dating from the end of the thirteenth century, which may have derived from portolano or early sailing directions. The main features of these charts include the rhumblines, or lines for plotting bearings, criss-crossing the map, and intersecting with sixteen or thirty-two point compass roses. Coastal place names are

marked; important ones being in black, and others in red. The early charts showed only the Mediterranean Sea, but gradually the area covered extended to the Black Sea, and the west African Coast. By the late sixteenth century, America, Asia, and the Pacific had also been added. The form of the atlases varied from folio charts folded and bound in leather covers, to the example on display, in which charts have been mounted on both sides of boards, folded in concertina fashion, possibly for easier consultation. The standard portolan atlas usually consisted of thirteen charts — one world chart (either Europe only, or the whole world in later periods) and twelve regional charts. Some atlases were made up of contiguous regional sheets, that, if put together, would form one large chart of the area, while others, such as this one, were made up of maps at different scales. This atlas contains charts for the European coast and the Black Sea, two charts on the Adriatic and Aegean Seas, the Atlantic Ocean, Asia, and the Pacific Ocean. Four larger scale charts depict the islands of Cyprus, Crete, Rhodes, and Hispaniola in the Caribbean Sea.

The atlas is open at the chart for the North Atlantic Ocean, and shows the results of explorations in North America to about the mid-sixteenth century. The charts were projectionless, but vertical grid lines and lines of latitude are shown, the latter an innovation of the sixteenth century; scale bars are marked in the

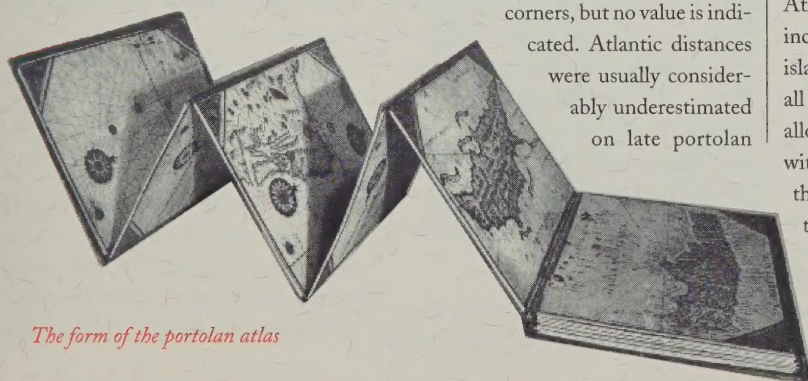
corners, but no value is indicated. Atlantic distances were usually considered underestimated on late portolan

charts, as this one shows. The atlas author has not been identified, but the work bears some similarity to that of the Greek Giorgio Sideri called Callapoda, or of Conte Ottomano Freducci, both of whom worked in Venice in the late sixteenth century. Colour photos of other charts from the atlas are on display in the Maclean Hunter Room (First Floor) Case 2.

The Island of Cyprus and part of the text from book three of Benedetto Bordone's Libro di Benedetto Bordone nel qual si ragiona de tutte l'Isole del mondo. Impresse in Vinegia per Nicolo d'Aristotile, detto Zoppino, 1528.

Folio. 107 woodcut maps on 73 leaves.

The island atlas, or isolario, probably developed out of the portolan chart-making tradition, and the need to show islands on a larger scale than the regular Mediterranean portolan chart. It was developed in Italy during the fifteenth and sixteenth centuries, and has been described as a guide for travellers, intermediate in form between a portolano and a historical-descriptive chorography. The earliest known isolario is a 1420 manuscript, 'Liber Insularum Archipelagi', by Cristoforo Buondelmonte. Benedetto Bordone's *Libro*, first published in 1528, is based on the first printed *Isolario* by Bartolommeo dalli Sonetti of 1485, but enlarged to sixty-four maps which cover the islands of the Aegean and Adriatic Seas, and the Atlantic and Indian Oceans. The book includes maps of towns that were on islands, and views and descriptions of all the islands. The maps are woodcuts, allowing them to be printed together with the text. In the sixteenth century, there were many other Italian publications of this type including those by Simon Pinargenti, Gian Francesco Camocio, and Thomaso Porcacchi, some of which had engraved maps.



The form of the portolan atlas

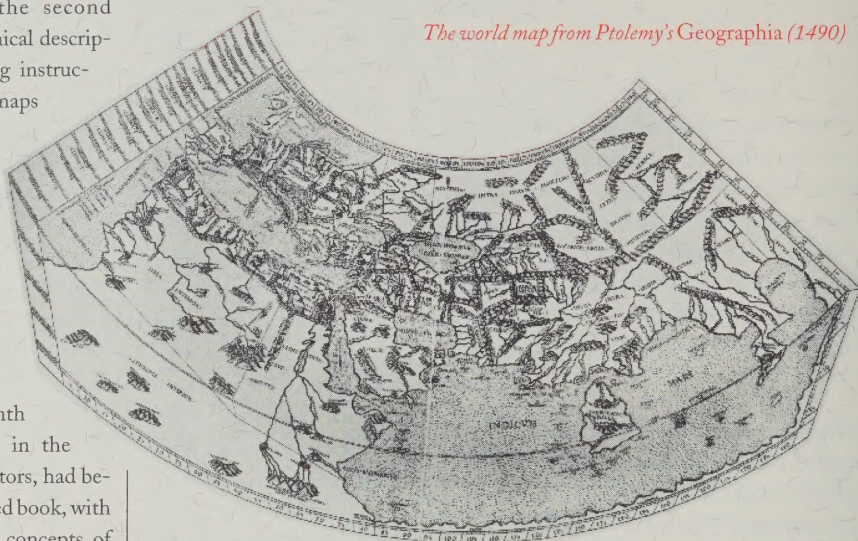
Ptolemy's *Geographia*, or *Cosmographia*, written in the second century A.D., is a geographical description of the earth, including instructions on the preparation of maps of the then known world.

It is uncertain whether maps originally accompanied the text. The earliest surviving Greek manuscript of his work which includes maps, dates from the late thirteenth or early fourteenth century. By the fifteenth and early sixteenth centuries, the *Geographia*, in the hands of many different editors, had become essentially an illustrated book, with the maps depicting Greek concepts of geography. Its basic form consisted of twenty-six regional maps and a world map [Europe and Asia], all of which follow the text. As different editors prepared the work for publication, new and modern maps 'tabulae modernae' were gradually added to the original twenty-seven to show newly discovered areas of the world. In time, so many new maps were available that Ptolemy's framework was no longer suitable for a contemporary world atlas, and the work essentially reverted to the original twenty-seven maps, and hence an ancient history collection. The first printed edition of Ptolemy's text appeared in 1475, and the first edition with maps in 1478. Approximately one hundred and forty-three manuscript versions are known; fifty-four editions were published between 1475 and 1900. There has been no definitive bibliography, however, and no critical edition.

The world map (Europe and Asia) on Ptolemy's conical projection from Claudius Ptolemy's [Geographia]. Rome: Arte ac Impensis Petri de Turre, 1490.

Folio. 27 engraved maps with Latin text.

The world map from Ptolemy's Geographia (1490)



The 1490 Rome edition exhibited here, like other books of the period, has no title page, but imprint information is found in the colophon. A 'Registrum Alphabeticum', or a gazetteer of places, from Johann Reger's Ulm edition of 1486 is included. Some of these places are shown on the maps, and others refer to modern maps which were not included in this edition. The maps, originally made by Nicolaus Germanus, are from what is known as the 'A' version, while the text is from the Latin translation by Jacobus Angelus. The maps are from the same engraved plates as the 1478 edition, considered to be one of the finest ever printed. The lettering was produced by punch and mallet, and each map was printed from two plates. The versos are blank. A.E. Nordenskiöld, an important nineteenth-century historian of cartography, felt that these particular editions were closest to the original, and therefore important "for the study of Ptolemy as an authority for ancient geography and a model for modern cartography".

The modern map of Germany from Claudius Ptolemy's Geographia Universalis, vetus

et nova... Basileae: Per Henrichum Petrum, 1545.

Small folio. 54 woodcut maps with Latin text.

This is the third edition of Ptolemy prepared by Sebastian Münster, and a revision of his edition of 1540 with slight variations, and six additional maps. The Basle 1540 edition added twenty-one new maps, thirteen of which were for Germany alone. The atlas is open at the general map of Germany, one of the modern maps added to the original work.

The index to sheets for the 1478 Rome edition of Ptolemy's Geographia, prepared by A.E. Nordenskiöld for his Facsimile-Atlas to the Early History of Cartography (Stockholm, 1889), p. 1.

The editors of Ptolemy arranged the maps in a specific order. Sheets of Europe came first, starting in the west and proceeding in a north-south mode to the east, followed by maps of Africa, and then Asia, again moving from west to east. In the 1478 and 1490 editions the maps overlap to cover regions, but where this happens less detail is shown on the

overlapping part of one of the maps. The Ptolemaic order for maps was generally used by atlas editors for at least the next century. In early editions, if modern maps were added, they were placed next to the Ptolemaic map for the area, while in later editions they tended to be grouped separately at the end.

CASE 2

Ortelius and the First True Atlas

IN ITALY, IN THE SECOND half of the sixteenth century, partly as a result of the very active map trade in Rome and Venice, the practice developed of assembling and binding collections of maps for individual clients. Such atlases are generally known as 'Lafreri Atlases', or Italian Atlases Assembled to Order (IATO). Termed 'factice' atlases, no two copies are alike, and each atlas was made to order, either from engraved maps in stock or from new printings of sheets. No text was included. The atlases are characterized by various finely engraved Italian maps of variable size, produced between the 1530's and the 1570's. Approximately seventy such 'atlases' have been identified to date, and more may have been broken up for sale. Although these atlases stopped short of a critical anthology of maps in the Ortelian sense, there were more maps printed in Italy between 1550 and 1570 than in any other country in Europe.

The map of Italiae with accompanying text on the recto from Abraham Ortelius's Theatrum Orbis Terrarum. Antverpiae: Apud Christophorum Plantinum, 1584.

Folio. 114 engraved hand coloured maps with Latin text.

A portrait of Ortelius and the beginning of his source list of authors from the 1584 edition.

Colour reproduction of the blind-stamped calf binding for the 1584 edition, probably done at the Plantin Press where the atlas was printed.

Reproduction of the engraved, hand coloured title-page from a facsimile of Ortelius's 1570 edition. (Lausanne, Sequoia, 1964)

It is to Abraham Ortelius (1527-1598), however, that we owe the production of 'the world's first regularly produced atlas' — an atlas in which maps were dominant, and in a uniform size and style. Ortelius began work as an illuminator of maps, but also collected maps extensively, familiarizing himself, in the process, with map-makers and the various sources for maps. He was acquainted with the Italian style atlases made up of sheets of different sizes, and, possibly at the suggestion of a colleague, he determined to collect the best source maps and produce a volume with maps of uniform size and style. This involved redrawing and reducing the maps, and then having them engraved in a consistent style. His first edition of the *Theatrum Orbis Terrarum*, published in 1570, was im-



Part of the map of Italiae from Ortelius's Theatrum Orbis Terrarum (1584)

mensely popular, and over forty editions, in various languages, were produced by 1612. The 1584 edition on display is typical of his work. The folio volume has Latin descriptive text on the versos of the maps, and the preliminaries include an explanation of the symbolization on the title-page, a portrait of Ortelius with a letter of praise from Mercator, an index of places keyed to map numbers, and a complete list of the authors who made the maps. At the end of the atlas is his 'Parergon', or collection of historical maps. The plates remained the property of Ortelius, who effectively operated as editor-publisher.

The map of England from the 1595 edition of Abraham Ortelius's Theatrum Orbis Terrarum. Antverpiae: Ex Officina Plantiniana A. Ortelii aere et cura, 1595.

Folio. 115 engraved hand coloured maps with Latin text.

From time to time Ortelius produced 'Additamentum', new map sheets that could be attached to a new atlas edition, or inserted in earlier copies. The number of sheets increased from fifty-three maps in 1570 to one hundred and nineteen maps in 1598.

The map of Italy with facing text from An Epitome of Ortelius His Theatre of the World. At London: Printed by John Norton, [1602-3]. [Colophon]: Typis Henrici Sevingenij.

Oblong octavo. 121 engraved maps.

In time, smaller, cheaper versions, or pocket atlases, of Ortelius's work were prepared to appeal to a wider audience. The 1602-3 English edition of the *Epitome* printed by John Norton, is an example of one of these. The plates are from the Peter Heyns edition of the *Epitome*, which had first appeared in 1577 printed by Philip Galle. Normal practice at this time was for the text to be printed first, and the plates printed afterwards, so that the paper would be

smooth for the text impression, and also because type was scarce, but in this case the plates were printed first in Antwerp, and the map sheets were then sent to London.

CASE 3

Gerhard Mercator and Early 17th Century Atlases

The map of Galliae from Gerhard and Rumold Mercator's Atlas Sive Cosmographicae Meditationes de Fabrica Mundi. Dusseldorpii: Gerardi Mercatoris Rupelmundani, 1602.

Folio. 107 engraved hand coloured maps with Latin text.

Color reproduction of the portrait of Gerhard Mercator from the 1602 edition.

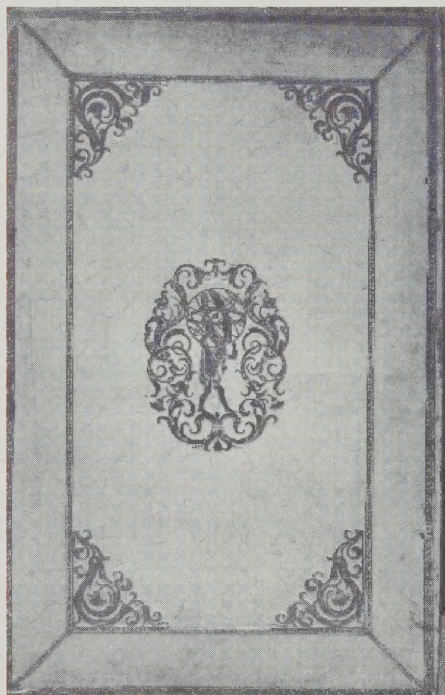
Reproductions of the table of contents using signatures of folio plates, and part of the

place name index from the Galliae section of the 1602 atlas.

Ortelius did not edit the maps he used for his atlas before redrafting them, but this is what Gerhard Mercator (1512-1594) contributed to the newly emerging 'atlas' form. He carefully analyzed all the available map sources to create new maps, ensuring that they were correctly placed with regard to each other by the graduation of longitude and latitude. The fineness of the resulting maps accounted for the longer life of his plates compared to those of Ortelius. He had planned a large encyclopedic work encompassing the creation of the world, cosmography, a description of the earth, including modern geography, the geography of Ptolemy and the ancients, the history of states, and a chronology. Only a portion of his plan was accomplished, and only the first two parts of his work on modern geography (the atlas) were complete at his death. He had taken the step of issuing his atlas in parts, and the initial part, *Galliae Tabulae*

Geographicae, was published in 1585. The final work, incorporating the three parts, was published after his death in 1595, by his son Rumold Mercator, under the title *Atlas sive Cosmographicae*. In his 'Preface Upon Atlas', Mercator indicates that the term was chosen to honor Atlas, the Titan in Greek mythology, later deemed King of Mauritania and a learned philosopher, mathematician, and astronomer, and this work brought the term into general use.

The binding from the first volume of Joan Blaeu's Atlas Maior (1659)



The 1602 edition exhibited here, is very similar to the 1595 edition, except for the addition of five new maps at the beginning, and the binding of the three parts in a different order. Each of the three sections had its own title-page, its own introductory text, a list of contents, and an index. The map of France displays the fine Italian italic hand Mercator used for names, which he introduced into northern Europe for use on maps, and which became the standard during the next century.

The much enlarged and more detailed map of Galliae by Henricus Hondius from volume 2 of the facsimile (Amsterdam, 1968) of the Mercator-Hondius-Janssonius Atlas, or, A Geographice Description of the World. Amsterdam, 1636.

Gerhard Mercator's 'Preface Upon Atlas' from the Mercator-Hondius-Janssonius Atlas (1636).

As in the case of Ortelius's work, a smaller version of Mercator's atlas, the *Atlas Minor*, was developed. It was prepared by Jodocus Hondius from the 1606 edition of the larger atlas. Hondius had also acquired the plates for Mercator's folio atlas, and reissued it in many more editions to 1638, evolving it into an atlas of as many as three hundred and eighteen plates. From this time on, it would be customary for the contents of atlases to change in successive editions as plates were taken over by new publishers, not only in the use of revised maps, but in the increase in the number of maps for certain areas.

Photograph of atlas guards, or stubs, and gatherings from David Woodward's 'The Techniques of Atlas Making' in The Map Collector, no.18 (March 1982) p. 10.

The binding of large atlases soon became an art in itself, as it was required to

be both strong enough to hold maps and text in place, yet flexible enough to allow a folio map plate to be opened out flat. Most of the major atlases of this period and later are 'folio', that is, made up of sheets folded once. Usually the map was engraved on the inner two pages, and the text, when present, was printed on the front or recto of the first leaf, and sometimes also on the back or verso of the second leaf. Binding these large folio sheets was obviously difficult, and the process known as guarding was developed to deal with this. As Woodward notes, the sheet is attached to a stub at the fold, and this, in turn, bound into the volume in gatherings with dummy stubs, to compensate for the thickness of the folded maps. The diagram shows how this was done.

The map of New France from Cornelius Wytfliet's Histoire Universelle des Indes Orientales et Occidentales. A Douay: Aux despens de Francois Fabri, [1605]

Small folio with text in quarto. 20 engraved maps.

A more minor map and atlas-maker of the period was Cornelius Wytfliet. His intention in preparing his atlas, which was more of an illustrated book, was to describe parts of the world revealed by modern discovery, but unknown to Ptolemy. In his work, which may have been only the first part of a larger project, he produced the first cartographic collection devoted solely to America. Drawing on recently published maps and sources, he put together a compilation noted for its elegant Latin text and finely executed maps. This edition illustrates one way atlases were put together at this time. The text is in quarto and paginated. The maps are small folio sheets with versos blank, and are bound in between signatures, rather than all together at the back. There is no contents page, but at the back there is a 'Table des Cartes géographiques' lo-

cating the maps, and a general place name index to the work. The second part of the book includes a text by Antonio Magini with maps on Asia.

CASE 4

Blaeu and the Great Age of Dutch Atlas-Making

The map of the territory of Padua from volume 3 of the Dutch edition of Willem and Joan Blaeu's Toonneel des Aerdrycx, oft, Nieuwe Atlas. t'Amsterdam: By Johan Blaeu, [1650]

Folio. 68 engraved hand coloured maps with Dutch text. (Gift of the Estate of J. Stuart Fleming)

In the seventeenth century the main centre for atlas production moved from Antwerp to Amsterdam, and was dominated by the Blaeu, Hondius, and Jansson families. The atlas became the dominant cartographic form of the century. As more and more source maps became available, each atlas tended to increase in size, both in physical format and in numbers of volumes. Moreover, the atlases became more complicated in form, and with respect to sources. The acquisition, by Willem Blaeu, of about forty of the plates from the Mercator-Hondius atlas from Jodocus Hondius, pushed Henricus Hondius and Joannes Jansson into partnership to compete with Blaeu. But it also meant that in the early 1630s, both Blaeu, and the Hondius-Jansson partnership, were producing atlases with almost identical maps, although under different titles, and sometimes attributing authorship differently. Although H. Hondius and J. Jansson published extensive 'atlas appendices' to the Mercator-Hondius atlas, which later grew into Jansson's *Atlas Novus* in six volumes, they never did as well as the Blaeu family of map-makers.

Willem Jansz Blaeu (1571-1638), the earliest in the family to produce maps and atlases, trained as an assistant to Tycho Brahe, the great astronomer, and was initially more interested in marine cartography. He also, however, began to produce a land atlas, the *Theatrum Novus Terrarum* or *Novus Atlas*, which reached six volumes by 1653, and is shown here in the Dutch edition. The maps, often enhanced with insets and decorative features, were beautifully engraved and printed, though not always including the most current information.

The double-hemisphere world map from the first volume of Joan Blaeu's [Atlas Maior] Nuevo Atlas, O Teatro del Mundo. En Amsterdam: Juan Blaeu, 1659.

Folio. 71 engraved hand coloured maps with Spanish text. (Gift of David Lank)

Joan Blaeu (1596-1673) was more ambitious than his father to produce a large work. The height of atlas production in the century was his *Atlas Maior* in twelve large folio volumes, containing approximately six hundred maps, and produced in various language editions from 1659 to 1672. This has been deemed one of the finest atlases ever produced, among other things, because of the high typographic standard, the very fine colouring of the maps, and the bindings. The atlas was so luxurious that it was frequently presented to princes and military heroes. It was probably the most expensive book for sale in the latter half of the seventeenth century. In 1671, the incomplete Spanish edition of ten volumes, a volume of which is displayed here, was on sale in his shop for 460 florins coloured, and 390 florins uncoloured. Translated into modern values this would be the equivalent of 45,000 florins or \$16,500. Some copies of atlases were purchased uncoloured, so that they could be coloured by a master-colourist such as Dirk Jansz Van Santen.

The maps had text on the reverse of the folio sheets, but they were also sold separately without text. From time to time, plates were revised, and were therefore sometimes of later date than the date on the unrevised title-pages. For instance the map on display is usually found in atlases issued after 1662.

A colour photograph of the binding from the first volume of the Spanish edition of the Atlas Maior (1659)

Bindings for Blaeu atlases, known around the world as Dutch or 'atlas' bindings, were often of vellum, with gilded medallions, borders, and corner pieces, and sometimes included the printer's mark of the Blaeus, or, as in this case, the figure of atlas supporting a globe. Others were bound to order in morocco and finer materials, with personal coats-of-arms added.

Reproduction of the chart of the English coast, from Dover to the Isle of Wight, from Lucas Waghenae's Spieghel der Zeevaerdt. (Leyden, 1584-1585). Amsterdam: N. Israel-Meridian, 1964

Sea atlases were rooted in the portolan chart tradition, and included similar compass roses, rhumb lines, shoals, and rocks. In a larger atlas volume, many more charts could be included to show details of coasts, passages, and harbours. The first printed sea atlas was that by Lucas Waghenae in 1584-5. Coastal profiles were shown, and details such as sandbanks and soundings were very prominent. Charts were oriented for the convenience of mariners approaching land, not necessarily to the north.

The map of the English Channel from Jacobus Robijn's Zee Zea Atlas Aquatique Del Mar. l'Amsterdam: J. Robijn, 1683.

Folio. 40 engraved hand coloured maps.

Jacob Robijn acquired the plates for a sea atlas by Pieter Goos in 1680, and began producing his own atlas from a combination of these and other maps that he had prepared. The atlas, issued in 1683, has no text other than the title page and a list of contents, and exists in a variety of states. The chart of the English Channel shown here is less detailed and in a simpler style than that of Waghenae's, and lacks the coastal profiles.

CASE 5

English Atlases in the 17th and 18th Centuries

The map of the County of Lancashire from John Speed's The Theatre of the Empire of Great Britaine printed with A Prospect of the Most Famous Parts of the World. Performed By John Speed. London: Printed by M. and S. Simmons, 1662.

Folio. 67 engraved maps

Reproduction of the title-page from John Speed's Theatre of the Empire of Great Britaine (1662)

A home industry in atlas and map-making was slow to develop in Great Britain, and for many years publishers depended upon the importation of en-

graved maps from the Netherlands. In addition, Dutch engravers formed business arrangements with English publishers. For instance, the maps for Speed's *Theatre of the Empire of Great Britaine*, first published in 1611-12, were engraved by Jodocus Hondius in Amsterdam, and the plates were sent to be printed in England on the reverse side of the text sheets. The *Theatre* was not the first English county atlas, having been preceded by that of Christopher Saxton in 1579, but it was the first attempt, in England, of atlas-production on a grand scale. Speed, as the author and editor, had compiled the atlas from the many map and text sources he had collected; as Skelton says 'exposing a magpie-like habit of mind'. Hondius engraved the plates, adding insets of prominent towns and pictorial decorations in the margin, (the latter a fashion launched by him in 1595), under contract with the publishers rather than with Speed. In the later editions, the *Theatre* was issued in tandem with the *Prospect of the Most Famous Parts of the World*, which was meant to be bound before the former. The text was printed on the front of each double-page map and an index to places printed on the back.

The Road from Bristol to Banbury from Britannia Depicta: or Ogilby Improved. Engraved by Emanuel Bowen, Geographer.

The discovery of America from Edward Quin's Historical Atlas (1830)



By John Owen, Gent. London: Printed for Carington Bowles, 1764.

Octavo. 273 pages of engraved maps and text.

In the century from 1650 to 1750, many English atlas ventures were proposed, and many failed for lack of financial support. John Ogilby, for instance, had planned a five or six volume atlas for England, but the only part to appear was his road atlas in 1675. His unique method of mapping routes between various places, by showing the roads, towns, and facilities for the traveller in strip-maps, led to many later editions. On display is a small edition by Emmanuel Bowen, published by Carington Bowles in 1764. Text and map were engraved on the same plate, and both sides of the page are printed, suggesting that several maps and texts were engraved together on one plate, and then folded and gathered in 'octavo' style.

The map of Ireland and facing text from Atlas Minimus Illustratus. Drawn and engraved by J. Gibson; Revised, Corrected and Improved, By E. Bowen. London: Printed for T. Carnan and F. Newberry, 1774.

16mo. 52 engraved maps

The *Atlas Minimus* is an example of a pocket atlas, popular from the very beginning in atlas production (see Ortelius's

Epitome in Case 2), usually as reduced versions of larger atlases. The atlas was put together so that the map (with verso blank) was tipped in to face a text page. Evidence from a disbound copy in the National Archives of Canada suggests that several maps were engraved on one copper plate, and then cut up for insertion, as it was cheaper to print several maps together.

The map of Italy from A General Atlas, Describing the Whole Universe. By Thomas Kitchen. London: Robert Sayer, 1773.

23 engraved hand coloured maps in 35 sheets. Various sizes.

In the late eighteenth century, there was a return to the production of composite atlases made up from separately published, often multi-sheet maps, which had to be folded down to volume size. Although most of these had title-pages and a brief list of contents, the maps were by many different authors, there was often no other text, and copies vary in containing maps in different states, or actually different maps. Kitchen's *General Atlas* bears a date of 1773 on the title-page, but the maps actually date from 1768 to 1775. During times of war, such as the American Revolutionary War, it was important to produce maps of suffi-

cient detail for military purposes (hence the atlas made up of very large maps of varying sizes), and it was also vital to keep maps, and therefore atlases, up to date. The *Atlantic Neptune*, consisting of coastal and harbour charts of eastern North America, prepared by Joseph Des Barres in the 1770s and 1780s, is a good example of

an atlas with varying contents. No two copies are the same, mostly because copies were bound to order for naval commanders and various officials, and consisted of the latest available states.

CASE 6

French Dominance in Atlas-Making, 1650~1760

The map of Spain (1658) probably from Nicolas Sanson's Cartes Generales de Toutes les Parties du Monde. A Paris: Pierre Mariette, [1658]

By the late seventeenth century, the main centre for atlas production had passed from Amsterdam to Paris, partly because of the growing influence of the Academy of Sciences, founded in 1666. Nicolas Sanson (1600-1667) was undoubtedly the foremost map-maker in France during the seventeenth century. He was also the first to be educated in geography, although as a 'géographe du cabinet', he emphasized historical and thematic cartography, and a careful reworking of source maps, rather than surveying and astronomy. His large *Cartes Generales ... du Monde* was the first world atlas published in France, and is considered by many to be the most important French world atlas ever made. He paid particular attention to the use of uniform scales in the atlas, and also to producing a balanced world coverage. His stock of maps, however, had to be compiled over several years, so that his atlases are rarely identical in composition. The atlas went through six editions from 1658 to 1676, all published by Pierre Mariette, with whom he was obliged to go into partnership to get financial backing. Although he had to compete with Joan Blaeu's *Atlas Maior*, Sanson's atlas was more successful in France because it was smaller and



The title cartouche for the map of Africa from Mercator's Atlas (1602)

An historical map included in Speed's Theatre of the Empire of Great Britaine (1662)



cheaper. The maps were more sparsely decorated than many of the Dutch ones, and coloured in outline only. Lettering was uniform, with careful choices of the size and style of letters for place names, to clearly indicate large and small regional divisions, and he was the first to apply such a standard throughout a large atlas. The versos of Sanson's atlas maps were blank, and his separation of map from text engendered a new approach to the inclusion of text in atlases in the succeeding century.

The map of North America from Nicolas Sanson's L'Amerique, en plusieurs Cartes. A Paris: Chez L'Auteur, rue S. Iacques, à l'Esperance, [ca. 1665]

Quarto. 15 engraved hand coloured maps.

Sanson also produced smaller quarto versions of his larger atlas, but in parts for each of the four continents. The maps were tipped in on guards at appropriate places in the text. However in this edition there is no list of contents or key to map locations. Sanson's work was very popular, and various editions and works derived from his atlases were published in the Netherlands and elsewhere.

The chart of part of the English Channel from the Dutch edition by Pierre Mortier of Le Neptune François, ou, Atlas Nouveau des Cartes Marines. Pene, Cassini etc. Paris: Jaillot, 1693.

Folio. 43 engraved hand coloured maps.

There were few maritime atlases made in France in the seventeenth century, but towards the end of the century an official government survey of the coast was undertaken, in which various engineers were involved. The result was *Le Neptune François*, printed by l'Imprimerie royale, which appeared in 1693, and consisted of 29 charts. This ushered in the most important period of French contribution to cartography and atlas production, which was a joint effort on the part of scientists of the Academy of Sciences and the government to publish the results of major surveys. The *Neptune François* was important not only for the very rigorous survey methods used, but also because, for the first time, all the charts were marked with latitude and longitude. The copy of the atlas on display is the first part of a pirated edition which was simultaneously published in Amsterdam by Pierre Mortier, but with the false Paris imprint of Hubert Jaillot to encourage sales in France. It includes a curious section (for a government supported atlas) of nine plates of European waters for the use of the armies of the King of Great Britain.

MACLEAN HUNTER ROOM FIRST FLOOR, STANDING CASE

The world map from Gilles and Didier Robert de Vaugondy's Atlas Universel. A Paris: Chez Les Auteurs [et] Boudet Libraire Imprimeur du Roi, rue St. Jacques, 1757.

Folio. 107 engraved hand coloured maps.

Reproductions of the instructional map from Atlas Portatif Universel et Militaire (1748-9), and part of the subscription list, and the list of contents for the Atlas Universel (1757)

Gilles and his son, Didier Robert de Vaugondy, inherited the geographical business of Nicolas Sanson in 1730. As geographers, their work exemplifies the essence of the Enlightenment in France, and they played an important role in making maps and atlases available to the educated public, disseminating information on new geographical discoveries, and in promoting the new scientific approach to cartography. In the preface to their *Atlas Universel*, they indicated that their purpose was to make the atlas of manageable size, complete, uniform in style and scale, and consistent, but also aesthetically pleasing. Theirs was the first atlas to be sold in France by subscription. An

influenced many later historical atlases, particularly in France and England, and its controversial use can be traced to the present time.

The discovery of America from Edward Quin's An Historical Atlas: In a Series of Maps of the World As Known at Different Periods. Liverpool: Printed For R.B. Seeley and W. Burnside, London, 1830.

Folio. 22 maps (engraving with mezzotint, hand coloured). (St. Michael's College Library)

Many atlases were produced for school use in the nineteenth century, particularly in Germany and Great Britain. One interesting atlas in terms of cartographic design was that produced by Edward Quin in 1830. His method was to show black clouds slowly rolling back to reveal areas of the world known to Europeans at various periods. The example shown, of the world at the time of the great discoveries is meant to cover the period from 1294 to 1498 and includes the coastline of only part of America. The atlas covers the period from the Creation, and, in a theological approach to history, the first plate shows only the Garden of Eden.

The map of Hungary including Bosnia, Croatia, and Serbia in 1526 from Karl Spruner von Merz, Historisch-Geographischer Hand-Atlas Zur Geschichte Der Staaten Europa's. Zweite Auflage. Gotha: Bei Justus Perthes, 1854.

Folio. 73 steel engraved hand coloured maps.

One of the leading German producers of historical atlases was Karl von Spruner, who first published his historical atlas in 1846. The seventy-four thematic maps for Europe included not only the usual plates for state boundaries at various periods, but also some ethnographic and linguistic maps. His work formed the classical prototype for most modern historical atlases.

The 19th Century and the Development of Thematic Atlases

DURING THE NINETEENTH century, more and more general atlases were being produced in Great Britain, Germany, and the United States. These included maps of various countries and states, and, after mid-century, one or two thematic maps began to be added. Increasingly, new types of textual information, such as comparative geographical statistics for the world, were also being included. Maps were still being hand-coloured, but colour printing began to be used in the third quarter of the century. In addition, different types of atlases and different formats were being developed. These included the American county land-ownership atlases, increasing numbers of atlases for schools, and historical atlases. The new technical developments in map-making such as lithography, and cerography, or wax engraving, had an impact on the form of atlases.

The cover title from Lieferung I of a serially issued edition of Stieler's Hand-Atlas. Gotha: Justus Perthes, 1890.

Folio. 3 colour lithographed maps in folder.

Some publishers experimented with issuing atlases in serial parts, which would later be reissued in bound form. Although this meant that some of the maps would be available sooner, the final product was of various dates, often stretching across two decades, and this produced a lack of consistency.

Colour reproduction of the map of Germany from Sidney Morse's A System of Geography for the Use of Schools. New York: Harper & Brothers, 1855.

54 wax engraved hand coloured maps on 72 pages.

This atlas is an example of the use of cerography or wax engraving. A relief printing method used primarily in the United States in the latter part of the century, wax engraving allowed the maps to be printed on the same page as text, or on both sides of a page, so that the two parts of the atlas (maps and text) could be better integrated. Although invented by Sidney Morse in 1834, the main use came when Rand McNally began using the technique extensively in the 1880s. Although inferior to copper or steel engraving it was used extensively because of its cheapness until the Second World War. Colour printing was incorporated into the technique in the second half of the nineteenth century, but this example is hand coloured.

Map of the township of South Dumfries and views of buildings from the Illustrated Historical Atlas of the County of Brant Ont. Page & Smith: Toronto, 1875.

Folio. 26 lithographed hand coloured maps.

In the United States and Canada, commercially produced county atlases were an outgrowth of the production of county wall maps, and drew attention to new immigrants' pride in the ownership and improvement of their land. The atlases first appeared in the 1860s, and their heyday was in the 1870s and 1880s. Generally, atlases included maps for each of the administrative units in the region, with names of landowners, one or more general maps, local history texts, views of various estates and buildings, and portraits of prominent people. The atlases were sold by subscription, subscribers were listed, and people paid extra to have drawings of their farm or portraits included. Maps and views were printed on both sides of the page.

The Carnivorous Animals plate from A.K. Johnston's The Physical Atlas of Natural Phenomena. Reduced from the Edition in

Imperial Folio for the use of Colleges, Academies, and Families. Edinburgh and London: W. & A.K. Johnston, 1850.

Folio. 24 steel engraved coloured plates of maps.

Plate 34 "The Moral and Statistical Chart of the World" from the large folio edition of A. K. Johnston's *The Physical Atlas of Natural Phenomena. A New and Enlarged Edition. Edinburgh and London: W. & A.K. Johnston, 1856.*

Folio. 35 colour lithographed maps.

Thematic mapping, or the production of maps emphasizing one or more special themes other than general topographic information, has revolutionized the making of atlases in the twentieth century. It was, however, in the nineteenth century that the main initial development in thematic mapping occurred. At first, a few thematic maps were included in general atlases, and then at mid-century specialized thematic atlases began to appear. Thematic mapping is generally radically different from topographic mapping, in that non-cartographic and, frequently, tabular sources are used to plot information on a suitable base map. Much of the thrust for this mapping had come in the nineteenth century, from the development of specialized fields of research in physical subjects such as geology, hydro-graphy, meteorology, zoology and biology, and in socio-economic areas of interest in conjunction with the development of the collecting of statistics. In Germany, Heinrich Berghaus in association with J. Perthes and A. Stieler, published the first comprehensive thematic atlas, based on the work of the geographer Alexander von Humboldt, in 1838. In Edinburgh, J. Johnstone and W. & A.K. Johnston began to work on a revised version of

Berghaus's work in English, and their *Physical Atlas* appeared in 1845, while a larger version was published in 1848. Curiously, though described as physical atlases, both included several plates on ethnography and religion.

The plate showing lighthouses with drawings of the individual buildings from Société de Géographie de Finlande Atlas de Finlande. Helsingfors: Société Anonyme F. Tilgmann, 1899.

Folio. 42 plates of colour lithographed maps. (University of Toronto Library, Map Collection)



The title-page from the first volume of the Spanish edition of Joan Blaeu's [Atlas Maior] (1659)

Although the state tended to be fully occupied conducting topographic surveys of the nation, national academies and geographical societies continued to make

contributions in the area of thematic mapping. By the end of the century, the concept of a national atlas as a multi-subject group of maps for a country, summarizing contemporary scientific knowledge in physical, economic, and political arenas had been developed. The first one, in 1899, was the *Atlas de Finlande* prepared by the Geographical Society of Finland, with 32 plates covering a broad range of topics in the physical, economic, and socio-demographic areas. Colour printing was crucial for the development of thematic maps; the invention of chromolithography and other colour printing methods made it possible for these maps to be produced.

Facsimile Atlases

ONE TYPE OF SPECIAL atlas that had developed by the mid-nineteenth century, was the facsimile atlas of early maps, for the study of the history of cartography. Based on a desire to make the great 'geographical monuments' — maps both manuscript and printed — available for study, the works were comprised of collections of documents, and often demonstrated considerable historical analysis. Although some scholars debate the current usefulness of these early works, R.A. Skelton, a major historian of cartography, thought that the facsimile collections were very notable achievements, enabling scholars to formulate "the central problems in the comparative study and use of early maps as historical documents".

The two earliest facsimile atlases were that by the Frenchman Edme Jomard, *Les Monuments de la Géographie*, which appeared serially from 1842 to 1862, containing maps only, and those by the

Portuguese scholar the Vicomte de Santarem. Santarem produced three facsimile atlases, in 1841, 1842-1844, and 1849-1855. The final one contained seventy-seven maps, dating from the eighth to the seventeenth centuries, from a large number of European libraries. The maps were mainly 'mappaemundi', with a section on the Portuguese exploration of the African coast. Santarem's works are very complicated bibliographically, since he issued some sheets separately, and used some from earlier publications in later atlases, and few copies of the original editions are complete. His 1849 atlas was meant to be definitive, and has been reissued in 'facsimile' itself several times. Since photography was not available at the time for making reproductions, the maps in both Jomard's and Santarem's works were copied by hand, and then re-engraved for lithographing. In a situation like this, the atlas could contain erroneous graphic and textual transcriptions, and it is difficult to study the original mapping style.

Another researcher, Joachim Lelewel (1786-1861) of Poland, also produced a small atlas of facsimile maps to go with his *Geographie du Moyen Age* (1850-1857), a work on the history of cartography. The atlas included one hundred and forty-five maps, and thirty more maps were attached to the other volumes. He was particularly interested in the geography of the Arabs and their precise astronomical observations, and he criticized the work of Ptolemy on this score. Lelewel had to redraw the maps for his work, and he used two manuscript sources for the Idrisi map of 1154, one in Paris, and one in Oxford, to make a composite for his study. This, of course, is not strictly a facsimile, but rather a study version.

A. E. Nordenskiöld, the Swedish explorer and collector, produced two of the most important facsimile atlases in the nineteenth century. His first, *Facsimile*

Atlas to the Early History of Cartography (1889) consisted of one hundred and sixty-five maps, and was mainly an analysis of the fifteenth and sixteenth century editions of Ptolemy's *Geographia*, most of which he had in his own library. He chose printed maps because he felt they would have had a wider circulation than manuscript maps, and therefore a greater impact during the period of the major geographical discoveries. He also felt that the earlier facsimile atlases had covered manuscript maps. His second work *Periplus* (1897) covered one hundred and sixty portolan charts and later marine charts of European waters, including both manuscript and printed items. Both of the atlases were reproduced by photolithography of a very high quality, and are therefore true 'facsimiles'. Nordenskiöld's publications are also works of scholarship, with extensive analysis of the materials.

Unfortunately, these works are too large for permanent display, but the Fisher Library holds copies of the *Atlas du Vicomte de Santarem*: Edition Facsimile des Cartes Définitives, organisée par Martim de Albuquerque (Lisboa, 1989) and A.E. Nordenskiöld's *Facsimile-Atlas* and his *Periplus*. A facsimile of Joachim Lelewel's *Geographie du Moyen Age* (1850-1857) is in the Roberts Library.

MACLEAN HUNTER ROOM

CASE I

Atlas Title~Pages

TITLE-PAGES WERE another element in the atlas that reached the height of decoration in the sixteenth and seventeenth centuries. The features are highly symbolical or allegorical, and derived from artistic styles of the particular period. Ortelius thought the title-page was of importance in symbolizing the meaning of the work, and he

wrote about it in 'Frontispicii Explicatio' included in his atlas preliminaries. His allegorical representation of the four continents may include the first one for America, symbolized by the Amazonian warrior. His heavily architectural format can be linked to the proscenium of a theatre, and hence to the concept in the title — *Theatrum Orbis Terrarum*, or the atlas as the theatre of the world (see Case 2). The title-page designed by Antonio Lafreri about 1570 for his 'atlases' is also heavily architectural in concept, but includes, in addition, the figures of Ptolemy and Marinus of Tyre and Atlas with the world on his shoulders. His use of this figure, twenty-five years before Mercator's *Atlas* (1595), indicates that the image, although not the term 'atlas', was in use considerably earlier. Many early atlas-makers used metaphors in their titles to suggest the image they wanted the atlas to convey — Cornelis de Jode's *Speculum Orbis Terrarum* symbolized the atlas as the mirror of the world. Others used simpler decorative frames or cartouches for the title words, such as that found in Benedetto Bordone's *Libro* (1528) (see the title frame for this guide).

Mercator's design for the sectional parts of his atlas, such as 'Galliae', are classic examples of 'strapwork' designs as if in soft leather, further decorated with garlands of fruit and birds suggesting plenty, and a portrait of the monarch. Michael Drayton's *Poly-Olbion* featured the map of England draped over the allegorical figure of 'Albion', or Great Britain, surrounded by sea-shells and scallops suggesting the maritime element in Britain's history, and symbolizing the idea of the nation. Other title-pages in the seventeenth century, such as that for John Speed's *Theatre of the Empire of Great Britaine* (Case 5) exhibit a compartmentalized style in which historical figures are displayed in niches surrounding the title proper. Joan Blau's title-page for his *Atlas Maior* is

rich in allegory as well. At the top, geographers and cosmographers discuss their trade over various globes and an armillary sphere. Further down are four figures symbolizing the four continents against an architectural backdrop suggesting a theatre. The actual title of this particular volume appears to be unique, and is an early issue for the Spanish edition. The title has been pasted into the cartouche area of the engraved title-page, and refers to Willem Blaeu's earlier *Novus Atlas*, which may suggest that a Spanish edition of that work was contemplated but never published.

During the late seventeenth and eighteenth centuries some publishers produced non-decorative title-pages. A good example of a completely plain typographic design, although printed in colour, is found in Halma's edition of Sanson's maps in 1700. An example of the eighteenth century simple typographic style was that used for Kitchen's *General Atlas*; in this case, as in several others in the eighteenth and nineteenth centuries, the title-page was also used to list the contents of the atlas.

In eighteenth century France, influenced by the rococo style, the frame of a typographic title was sometimes done in a simpler style but surrounded with drawings of instruments symbolizing the purpose of the atlas. For instance the title for Robert de Vaugondy's *Atlas Portatif* (1748-9), shows drums, bugles, spears and cannons symbolizing war.

The title-pages shown here are as follows :

Reproduction of the title-page from Geografia Tavole Moderne di Geographia engraved by Antonio Lafriero in Rome about 1570 and used in some of his atlases compiled to order in the latter half of the sixteenth century. As indicated in the title the maps were assembled in Ptolemaic order.

Colour photograph of the title-page of the first volume of Joan Blaeu's [Atlas Maior] Nuevo Atlas o Teatro del Mundo (1659).

Colour photograph of the title-page for the part Galliae from Gerhard and Rumold Mercator's Atlas Sive Cosmographicae (1602).

The engraved title-page from Michael Drayton's Poly-Olbion or A Choro-graphicall Description of Great Britaine. London: Printed by H.L. for Mathew Lowmes; I. Browne; I. Helme, and I. Busbie, 1613.

The typographic title-page from a Dutch edition of Sanson's maps — Description de Tout l'Univers. A Amsterdam: Chez François Halma, 1700.

Reproduction of Thomas Kitchen's typographic title-page including contents for his General Atlas. London: Printed for Robert Sayer, 1773.

Reproduction of the title-page from Gilles Robert de Vaugondy's Atlas Portatif Universel et Militaire. A Paris, 1748-9.

The Portolan Atlas

COLOUR REPRODUCTIONS of other charts from the portolan atlas (Venice? late 16th century) exhibited in Case 1. The reproductions include the world map, the British Isles and western Europe, the islands of Hispaniola and Rhodes, Asia, the Black Sea and the Aegean Sea.

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